



ATTACHMENT A

REMARKS

The interview held with Examiner Nguyen is gratefully acknowledged. The courtesy extended to Peter Foster, one of the inventors, and his representative is greatly appreciated. The interview centered around the rejections of the claims under 35 U.S.C. 112, both the first and second paragraphs. As discussed below, the claims now presented are intended to address these rejections and the issues discussed at the interview. The substance of the discussion at the interview is incorporated in the remarks which follow.

Considering the matters raised in the last Office Action in the same order as raised, the acceptance of the Terminal Disclaimer is noted with appreciation.

Claims 32-41 and 51-54 have been rejected under 35 U.S.C. 112, first paragraph, as "failing to comply with the enablement requirement." These claims have also been rejected under 35 U.S.C. 112, second paragraph, as being "indefinite for failing to point out and distinctly claim the subject matter which Applicant regards as the invention." These rejections are respectfully traversed, although claim 32 and a number of the other claims have been amended so as to address the issues raised.

Claim 32, as amended, embraces a number of alternative embodiments that were questioned by the Examiner in the last Office Action. In that Office Action, the Examiner kindly explains in some detail his concerns about whether several of these alternatives are adequately supported. Applicant is satisfied that each of these alternatives is both supported by the specification as filed and would be understood by the person of ordinary skill as reasonable expressions of the originally claimed features.

Specifically, the method of claim 32 as amended includes "designating a USB device in said USB tree as a master USB device," which embraces both the embodiment where the master USB device is one of the plurality of USB devices to be synchronized and the embodiment where it is not one of the plurality of USB devices to be synchronized. This is consistent with the wording of the specification as filed in which original claim 26 (upon which original claim 32 depended) defined the step of "designating a master USB device in said USB tree." This step did not limit the master USB device to being one of the plurality of USB devices to be synchronized, or to be

separate from the plurality of USB devices to be synchronized, but merely that it be a part of the same USB tree and hence able to communicate with the plurality of USB devices.

It is respectfully submitted that, a person of ordinary skill in the art would understand that the master USB device can provide its recited function whether one of the plurality of USB devices to be synchronized or not. As defined in original claim 26, the master USB device is provided for “monitoring said USB traffic ... for said specific signal structures and for specific response signals from said USB device.” A person of ordinary skill would understand that this master USB device, if it is to monitor traffic to and from each of the plurality of USB devices to be synchronized, should be a part of the USB tree comprising the plurality of USB devices to be synchronized, but that is need not be one of the USB devices to be synchronized. This is why, as mentioned above, claim 32, as amended, refers to designating a USB device “in said USB tree” as a master USB device but, as also discussed above, does not specify that the master USB device should, or should not be, one of the plurality of USB devices to be synchronized.

The embodiment described in the specification as filed by reference to Figure 8 illustrates this point. From page 27, line 23, the specification as filed explains that “master back plane 112 also has additional circuitry or logic elements 117... and has the ability to time phase differences between devices 116 (each with different connection topology) by means of elements 117...” In other words, master back plane 112, by means of logic elements 117, acts as the master USB device; the devices to be synchronized are USB devices 116, which do not include master back plane 112. In this embodiment, therefore, the master USB device is not one of the plurality of USB devices to be synchronized. Nonetheless, master back plane 112 is clearly in the same USB tree as USB devices 116 (cf. Figure 8).

The Examiner is, therefore, correct in concluding that the specification supports designating one of the USB devices to be synchronized as a master USB device, but-- as can be seen from Figure 8-- the specification also supports designating as the master USB device a USB device that it is not one of the plurality of USB devices to be

synchronized. It is respectfully submitted that a person of ordinary skill would be entirely comfortable with the support provided both of these embodiments.

Claim 32, as amended, also refers to first and second specific signal structures. In paragraph 8 of the Final Office Action, the Examiner concludes that the specification supports these two sets of signals structures being different. The Examiner is correct: the first and second specific signal structures may be different, but claim 32, as amended, is not limited to their being different or identical, and a skilled person in the art would appreciate that the invention is viable in both cases. The original wording of claim 32 (by virtue of its dependency upon original claims 18 and 26) also defined two sets of signal structures, and also did not required the two sets of signal structures to be different or identical.

This approach is taught by reference to the second and third embodiments. The third embodiment, described from page 21 line 10 by reference to Figures 5A to 5C, adds the use of second signal structures to the first specified signal structures employed in the simpler second embodiment. According to the second embodiment, a logic circuit or matched filter is used to decode a first specified signal structure in the form of an SOF token, and to issue a timing signal for every SOF packet present on the USB (see page 19 line 34 to page 20 line 1). As is subsequently explained (see from page 20 line 31), this embodiment allows the production of a clock signal stable to arbitrarily high frequencies, but does not consider the synchronicity of the clocks. According to the third embodiment, therefore, the roundtrip propagation time of a specific data packet (i.e., the "second specific signal structure") is measured, and used to control the relative phase of each device's local clock, thereby synchronizing all attached USB devices to each other to an arbitrary degree (see page 21 lines 17 to 24). In the subsequent description of Figure 5A, this specific data packet in the form of an SOF packet (see from page 22 line 1).

Thus, both the first and second specific signal structures in the third embodiment are SOF packets, but as will be appreciated by a person of ordinary skill in this art--such packets are configurable and so in the third embodiment could be controlled to be identical or different. A person of ordinary skill would understand that both are

acceptable for performing the steps described in the second and third embodiments, and hence embraced by the original, and amended, wording of claim 32.

The Examiner notes that claim 32, as amended, refers both to a “master USB device” and to a “reference USB device”, but does not include a limitation requiring these either to be different or identical structures and thus concludes that the word of claim 32 embraces both embodiments. It is respectfully contended that each device performs a distinct role, but those roles could equally be embodied in a single USB device. Thus, the Examiner’s interpretation is, in fact, correct. Further, however, both embodiments should be embraced by claim 32, as a person of ordinary skill would readily appreciate that the distinct roles of these elements could be provided in a single USB device or in separate USB devices. Such a USB device or devices might require additional circuitry, but numerous examples of USB devices augmented to provide the functions in question are disclosed in the specification. For example, see the above discussion of the master USB device in the form of “master back plane 112, with additional circuitry or logic elements 117” for timing phase differences between USB devices 116.

Claim 32 as filed also omits such a limitation: claim 32, as filed, defines a master USB device for monitoring the USB traffic, and a reference USB device with respect to which the relative propagation delays of signals from a USB host to each of the USB devices are determined. As with the features discussed above, the claim recites the master and reference USB devices separately, such that they may be provided as separate physical elements, but does not preclude the use of a single device that acts both as the master USB device and the reference USB device. Thus, as filed, and as amended, claim 32 embraces, and the specification supports, this claim interpretation.

Finally, it is noted that, in order to expedite the prosecution, the dependent claims specifically directed to alternative embodiments that were discussed during the interview have simply been omitted.

Allowance of the application in its present form is respectfully solicited.

END REMARKS